

ON THE *COCCINELLIDÆ* FROM INDIA

IN THE COLLECTION OF

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The following paper contains account of the species of Coccinellidæ in the collection of Indian Coleoptera, formed by M. H. E. Andrewes of the Indian Forestry service, in the Madras Presidency.

These insects were collected by himself and by his friends M^r T. R. D. Bell of Kanara, and M^r C. Somers Smith both of the Indian Forest Service, in the districts of Madura in the South of the Madras Presidency and at Chamba and Dalhousie in the Himalaya Mountains at an altitude of about 8000 feet.

A good deal remains to be done before we shall be in a position to give any thing like a complete account of the Coleoptera of India, and their distribution in that vast peninsula, and the surrounding countries. The Museum at Calcutta contains a good series of the larger species of the present family, but I do not think much has been added to it recently. A great many species have lately been collected at Mandar by the jesuit missionary M. P. Cardon and these have been recorded by Herr Weise in the Annals of this Society for 1893, and some remarks will be found upon some of these submitted to me by M. G. Severin in the sequel to this paper.

Indian beetles according to my experience generally come to England in a poor state of preservation. In the *Coccinellidæ* many species of which are of very small size, and of which the essential characters are very obscure, it is of the first importance that the examples should be well preserved and clean, and that they should be as fresh as possible. The collection sent me by Mr. Andrewes is remarkable for the care which he and his colleagues have bestowed upon it both in the mounting of the specimens and in their careful labelling.

In answer to my request Mr Andrewes has furnished me with the following information, about the localities in which he and his friends have collected.

« Belgaum and Kanara are two of the Southern divisions of the Bombay Presidency. The district of Belgaum, which is largely an agricultural one, lies at the Western extremity of the Deccan

plateau, and about 2300 feet above the sea. Kanara on the other hand consists almost exclusively, of dense jungle, and while partly on the Deccan plateau, its western portion forming part of the so-called « Konkan », extends to the sea ».

With regard to the habits of the genera here treated of, *Hysia*, *Adalia*, *Hippodamia* and true *Coccinella* are really Palæarctic, and probably do not occur at low altitude or in the Deccan; a great many of the rest as *Coelophora*, *Verania*, *Thea*, *Chilomenes*, etc. are I observe found sweeping and beating round the rice fields, and would probably be found wherever herbage harbouring Aphides grew. *Brumus*, Mr Andrewes remarks, affects grass and low plants. The small hairy genera as *Clanis* and *Scymnus* inhabit trees and cop-pice, while the *Epilachna* it is well known are vegetable feeders, but their habits have not been well observed; *Epilachna minima*, was found under bark in December.

1. *Hysia endomycina* Boisd. Var. A. Muls. — Chamba.

Previously so far as I am aware this insect has only been recorded from New Guinea and Celebes.

2. *Adalia indica* Crotch. — Dalhousie.

3. *Adalia indica* var. *elytris singulis nigro-notatis*. — Chamba.
A scarce variety, very suggestive of *A. bipunctata*, which however does not occur in the Tropics or in India at all.

4. *Cœlophora ramosa* Oliv., Ent. VI, p. 996, t. 5, f. 61; *Oenopia luteopustulata* Muls., Spec. Col. Trim. sécur., p. 421; *Cœlophora luteopustulata* Crotch, Rev. Cocc., p. 156; *Cœlophora Mariae* Muls., Op. III, p. 56; *Anatis tibetana* Muls., Op. III, p. 46. — Chamba.

5. *Hippodamia constellata* Laich., Ins. Tyrol., I, 121; Crotch, Rev. Cocc., p. 97. — Chamba, Dalhousie.

A very widely distributed and accordingly rather variable species. It is probably always found in elevated districts and has occurred in Europe, Asia, Africa, and has been previously recorded from India. For synonyms see Crotch, loc. cit.

- 5a. *Coccinella septempunctata* Lin.. — Chamba. One remarkably small example.

var. *divaricata* Oliv. Chamba.

6. *Coccinella repanda* Thunb. — Belgaum, Madura, Kanara.

7. *Coccinella arcuata* Fabr. — Madura. A single specimen.

8. *Ballia Mayeti* Muls. — Dalhousie. Four examples variable in the number of elytral spots.

Ballia Mayeti var. *testacea* Muls. — Elytra spotless. — Dalhousie. One example.

9. *Cælophora bisellata* Muls. — Belgaum.
10. *Thea cincta* Fab. — Belgaum, Kanara.
11. *Synonycha grandis* Thunb. — Belgaum, Kanara
12. *Caria dilatata* Fabr. — Kanara.
13. *Verania Cardoni* Weise. — Belgaum, Kanara.
14. *Verania discolor* Fab. — Belgaum, Kanara.
15. *Chilomenes sex-maculata* Fab. — Belgaum, Kadegaon (Satara), Kanara.
 var. *suffusa* Gorh., elytris nigris, fascia flava juxta marginem
 et suturam retrorsum protracta. — Belgaum.
 var. *saturata* Gorh., elytris nigris vel nigro-piceis. — Bel-
 gaum.
16. *Chilocorus nigrinus* Fab. — Belgaum, Kanara.
17. *Orcus? ferrugineus* Gorh., n. sp. — Kanara.
18. *Exochomus lituratus* Gorh., n. sp. — Dalhousie.
19. *Exochomus uropygialis* Muls. — Dalhousie, Chamba.
20. *Brumus suturalis* Fabr. — Belgaum, Kanara.
21. *Clanis pubescens* Fab. — Belgaum, Kanara.
22. *Clanis binotata* Gorh., n. sp. — Belgaum, Kanara.
23. *Clanis? uninotata* Gorh., n. sp. — Belgaum.
24. *Rodolia rufopilosa* Muls. — Belgaum, Kanara.
25. *Ortalia? quadripunctata* Gorh., n. sp. — Belgaum.
26. *Jauravia limbata* Mots.? — Belgaum, Kanara.
27. *Epilachna Delesserti* Guér. — Madura.
28. *Epilachna Dumerili* Muls. — Burmah.
29. *Epilachna 28-punctata* Fabr. — Belgaum, Madura, Poona,
 Kanara, Burmah.
30. *Epilachna pytho* Muls. — Belgaum.
31. *Epilachna minima* Gorham, n. sp.
32. *Scymnus nubilus* Muls. — Belgaum, Kanara.
33. *Scymnus picescens* Gorh., n. sp. — Belgaum.
34. *Scymnus Guimeti* Muls. — Belgaum.
35. *Scymnus ephippiatus* Gorh., n. sp. — Belgaum, Kanara.
36. *Scymnus xerampelinus* Muls. — Belgaum.
37. *Scymnus? flavo-guttatus* Gorh., n. sp. — Belgaum.
38. *Cælophora melanota* Muls. — Burma.
39. *Aulis vestita* Muls. — Belgaum, Kanara.

Cælophora Cardoni.

Verania Cardoni Weise, Ann. Soc. Ent. Belg., XXXVI, p. 19.
 — Testacea, nitida, prothoracis punctis duobus, margine basali,
 extus abbreviata, scutello, sutura, lineis duabus uncinatis, punc-
 toque ante apicem nigris; pedibus totis testaceis. — Long. 4 millim.

Hab. INDIA, Belgaum, Kanara (Andrewes, Bell).

Bengal, Konbir (P. Cardon); Ceylon (G. Lewis).

The punctuation is scarcely visible, the form is orbicular similar to that of *C. sexareata*. In fully coloured examples the basal mark of the thorax is like a double flat wedge-shaped spot just united in the centre of the base, the two dots are in the middle of the disk. The elytral markings consist of the suture thinning out before the base and the apex, and two lines, the outer one recurved towards the suture, the inner one towards the margin, and a round dot near the apex. The margin of the elytra is a little expanded but not at the apex. The body beneath and legs are entirely pale yellow. I have seen this insect in other collections, but it was not in Crotch's, and does not appear to have been known to him.

Orcus ? ferrugineus n. sp.

Orbicularis, convexus, crebre ac distincte sed subtiliter punctatus, totus ferrugineus; elytrorum margine tenuiter reflexo; juxta suturam linea e punctis fuscis haud bene discretis formata. — Long. 2 millim.

Hab. INDIA, Kanara (Bell).

This little insect is quite orbicular, and rather strongly convex; the head is very thickly punctured so as to be semi-opaque; the thorax is three times as wide as long, the sides deflexed, the base obliquely so (as in *Chilocorus*), this and the elytra evenly and quite distinctly punctured, not at all pubescent.

The epipleuræ of the elytra are depressed for the motion of the knees, but are not inclined nor foveolate.

Orcus is the Eastern representative of *Chilocorus*, taking the place of that genus in Australia. But there are true *Chilocori* in India, and it is only provisionally that I place this and some other small members of the *Chilocoridae*, in the genus. At present I cannot point out characters for the separation of the genera contained in the subfamily.

Exochomus lituratus n. sp.

Ovatus, niger, dense breviter pubescens; elytris ochreis, plaga lata submarginali, ad apicem communiter exeunte, nigro-fusca. — Long. 5-5.25 millim.

Hab. : INDIA, Dalhousie (Somers-Smith).

Oblong-ovate, thickly but minutely punctured, clothed with a very thick, but short pubescence, which is of a yellowish grey colour.

The whole of the insect, with the exception of the elytra, is of a dull fuscous black. The elytra are ochreous or dull ferruginous, with a blackish rather broad plagia commencing near the callus on each and becoming wider at the apex, where it returns up the suture a little way, and runs out to the apex. The sides of the thorax are rounded, and gently reflexed.

This insect is allied to *E. uropygialis* Muls. which Crotch has placed in the genus *Brumus*.

It does not appear to consort at all with such species as *B. suturalis* or *B. desertorum*.

Two specimens from Dalhousie, Himalayas.

Clanis pubescens.

Coccinella pubescens Fabr., Suppl., p. 77 (1798).

Clanis pubescens Muls., Spec. Col. Trim., p. 999.

A large series of what I think to be this species were found by Mr Andrewes, those from Kanara being more robust and rather larger than those from Belgaum and perhaps pertaining to a different species. Among the Belgaum examples are some which have a faint indication of a dark undefined marking on the disk, and one very pubescent, and apparently fresh specimen has a distinct arcuate plagia, convex outwardly, on the centre of the disk of each elytron, but does not otherwise differ from the other Belgaum specimens. Since writing the above I have through the kindness of M. G. Severin been able to examine the type of *Clanis soror* Weise, and I have compared it with the Belgaum insect, and with representatives of *C. pubescens* from Ceylon and Pondichery in Crotch's collection, and with a number of fresh specimens from Ceylon (Point du Galle) taken by Mr George Lewis, and I come to the conclusion they must all be referred to one species. It is the fact that some examples differ from others in the depth and distinctness of punctuation, but it is well known that pale immature specimens of any species, differ in this way from older ones; and the pubescence is very often much worn off in old and not carefully preserved examples. And there is no other constant difference that I can see.

Of this species M. Andrewes says, « Fairly common from Feb. to May; once in July; generally beating trees and especially young coppice ».

Clanis binotata n. sp.

Orbicularis, pubescens, ferrugineus, elytris singulis puncto discoidali nigro. — Long. 2 millim.

Hab. INDIA, Belgaum, Kanara (Andrewes, Bell).

Of the size and form of *Clanis pubescens*, rather shining; paler specimens appear more thickly pubescent than the pale coloured examples, as probably the pubescence is easily rubbed off. The discoidal spot is sometimes nearly evanescent. The punctuation is close, and fine but distinct.

SCYMNUS FLEXIBILIS Muls. — According to two very immature and otherwise unsatisfactory representatives in Crotch's collection is a *Clanis*, and probably Mr. Crotch's examples are not Mulsant's species, but may be this insect. It is not very near to *Scymnus*, in any way. A considerable number were obtained by beating; Feb. to May.

Clanis? uninotata n. sp.

Ovata, ferruginea, densius pubescens, elytra puncto communi, subscutellari, subquadrato nigro. — Long. 1-5 millim.

Hab. INDIA, Belgaum.

This little species has very much the appearance of a *Scymnus*, the thorax is narrower than the elytra, at the base, and narrows gradually in front; the head is rather deeply sunk in the thorax, smooth in front between the eyes, and suggestive of *Ortalia*, the eyes very finely faceted. The whole surface is clothed with a fine, depressed, dense pubescence.

Three specimens from Belgaum by beating round ricefields in February.

Ortalia quadripunctata n. sp.

Pallide ferruginea, elytris subquadrato-orbicularibus, singulis maculis duabus, una juxta callum humeralem, minore; altera pone medium, ad suturam magis approximata, nigris. — Long. 4 millim.

Hab. INDIA, Belgaum (Andrewes).

This insect is of a pale, rather vivid, rusty-red colour, thickly clothed with a red pubescence which is very short.

It will be easily recognised by the four black spots on the elytra, of which the basal ones are placed just beneath and partly on the callus, while the posterior pair are larger and more approximated to each other, and a little behind the middle. These spots are roundish but a little transverse.

Three examples were obtained, by beating bushes round the ricefields.

Jauravia limbata.

Jauravia limbata Motsch., Étud. Ent. 1858, p. 118;? Crotch, Rev. Cocc., p. 274.

Pale whitish yellow, the breast sometimes a little infusate, elytra black, with the lateral margin rather widely whitish, widening at the apex, punctuation not distinct, appears slightly coriaceous.

Hab. INDIA, Belgaum, Kanara (Andrewes, Bell).

The difficulty of recognising Motschulsky's insect arises from the fact of his having only alluded to it in a few words, comparing it with *Jauravia pallidula*. There is a general resemblance in the insect here recorded to some species of the South American genus *Zenoria*, and it will perhaps be as well to assume that is Motschulsky's species. Crotch has given it twice by an oversight in the Revision with a short diagnosis, both seem to refer to the same species.

The Belgaum specimens of this insect were found by sweeping round the ricefields in May.

Epilachna minima n. sp.

Breviter ovata, saturate ferruginea, elytrorum margine basali et laterali (ante apicem abbreviata) punctisque duobus discoidalibus in singulis, et uno suturali haud bene discreto, corporeque subtus nigris. — Long 3 millim.

Hab. INDIA, Belgaum (Andrewes).

The smallest species of *Epilachna* known to me; the head and thorax bright rusty-red spotless, the elytra duller, with moderately distinct stellate punctuation. The black of the basal margin returns a little way down the suture, and there are one or two small indistinct spots along the suture not united though very close, and two distinct spots on the disk, one just before the middle, one about one third from the apex. The outer margin as far back as this spot, the epipleuræ and the body beneath are black.

Two specimens. Found under bark in December.

SCYMNUS NUBILUS Muls., Spec. Col. Trim. sécur., p. 972. — Belgaum, Kanara.

Specimens in Mr Andrewes collection agree very well with a typical specimen in Crotch's collection, but judging by the description they could be equally well referred to *Scymnus Curtisii*, of which I have not had the advantage of seeing a « type ».

Scymnus picescens n. sp.

Scymni nubili, quoad formam et staturam summa similitudine, piceus, nitidus, creberrime fortiter punctatus, pube brevi grisea parcius vestitus, pedibus concoloribus, femoribus interdum dilutioribus. — Long. 1,25 millim.

Hab. : INDIA, Belgaum (Andrewes).

I should hardly have considered this distinct from the species referred to *S. nubilus*, but that the punctuation seems a little stronger, and the upper surface more shining, being less pubescent. Colour distinction alone seems hardly worth considering in these obscure species of *Scymnus*, but apart from it there is so little to go by, that it is perhaps as well to separate them provisionally.

SCYMNUS GUIMETI Muls., Spec. Col. Trim. sécur., p. 979.

Hab. INDIA, Belgaum (Andrewes).

Four examples of a *Scymnus* allied to *S. nubilus* but having a transverse dark fascia common to the elytra a little behind the middle, and with the external margin and suture also dark, may be temporarily referred to this insect. But when Mulsant thought it worth while to describe an obscure *Scymnus*, of which the only locality given is « les parties orientales de l'Asie ? ». It seems frivolous to suppose that any positive identification can ever be made; and I feel that if possible such a name should be suppressed. It was at least an equivocal mode of immortalising the name of the « inventeur du Bleu Guimet » ! Mulsant, loc. cit.

Scymnus ephippiatus n. sp.

S. nubili iterum statura, at magis orbicularis, vix punctatus, pubescens, ferrugineus; prothoracis elytrorumque disco communiter nigro. — Long. 1,5 millim.

Hab. INDIA, Belgaum (Andrewes), Kanara (Bell).

Wider and more orbicular than *S. nubilus* and with the exception of the central part of the thorax, and a large discoidal patch on the elytra as wide on their bases as the thoracic mark, and leaving the lateral and apical margins widely rusty-red. The whole of the insect is ferruginous, but in some examples the breast, is black, and in several which are less mature the black parts are only pitchy. The legs appear to be always rusty-red. The pubescence is greyish with a golden and silky appearance. When the pubescence is worn off, the punctuation is seen to be slightly serial near the suture at the base, but is very fine and close. Some examples from Belgaum have the elytra pitchy, but there is a more or less distinctly darker indication of the patch; and the broader form will distinguish this insect from its allies.

This and the three preceding species of *Scymnus* were found by general sweeping and beating.

SCYMNUS XERAMPELINUS Muls., Opusc. III, p. 149; Crotch, Rev. Coccin., p. 256.

« Ovale; pubescent; d'un roux livide ou testacé en dessus, d'une teinte un peu moins claire en dessous. Plaques abdominales prolongées jusqu'aux trois quarts ou quatre cinquièmes de l'arceau. Long. $3/4$ l. »

Hab. INDIA (Deyrolle). Type, Crotch coll.

Belgaum (Andrewes).

A species of *Scymnus*, obtained by M. Andrewes at Belgaum, does not disagree to any great extent from the single example in Crotch's coll. ticketed « Type ». Our insect is rather larger, and of a darker brown, it is rather densely pubescent and unicolorous, rather wide, of the same form as the species here described as *S. ephippiatus*.

Nothing short of a full observation of the habits of life, with carefully set specimens, will enable any one to arrive at any certainty about these insects.

I do not consider the character drawn from the « *plaques abdominales* » as of any value whatever.

Scymnus? flavoguttatus n. sp.

Orbicularis, rufo-piceus, breviter pilosus, nitidus; capitis lateribus, prothoracis maculis tribus basalibus, elytrorumque maculis tribus in singulis albido-flavis. — Long. 3 mm.

Hab. INDIA, Belgaum (Andrewes).

Rather oblong, or very broadly elliptical, the prothorax nearly as wide as the elytra at their base, it's sides rounded a little, and the sides of the elytra widening evenly from the humeral angle so as not to form one continuous outline with the thorax. The margins of neither thorax nor elytra reflexed; punctuation scarcely visible. The head has a whitish-yellow spot on each side above the eyes, and the thorax has three basal whitish-yellow spots, the middle one produced forwards as a central line. The three elytral spots consist of two transversely about the middle (one on the margin) and one before the apex.

This is probably not a true *Scymnus*, but I cannot refer it to any other genus. Two specimens of this insect, were found living in amity with red ants in a hole in a Kindali tree, *Terminalia paniculata* W. et A.
